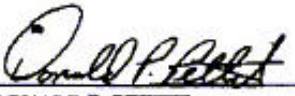


MEMORANDUM OF AGREEMENT (MOA)
BETWEEN THE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION'S
GODDARD SPACE FLIGHT CENTER
AND THE
UNITED STATES AIR FORCE'S
45TH SPACE WING
FOR
MUTUAL SUPPORT

APPROVAL SIGNATURES

Approval for 45th Space Wing:


DONALD P. PETTIT
Brigadier General, USAF
Commander
45th Space Wing

Date: 1/13/00

Approval for Goddard Space Flight Center:


A. V. DIAZ
Director
Goddard Space Flight Center

Date: 1/11/00

1. PURPOSE

This MOA defines the relationship and responsibilities of the National Aeronautics and Space Administration's Goddard Space Flight Center (NASA's GSFC) and the United States Air Force's (USAF's) 45th Space Wing (45 SW) for Eastern Range (ER)/mutual support. Support will consist of pre-launch testing, range safety, flight termination, communications, data acquisition, and tracking systems support, as required, for launch vehicles, payloads, sounding rockets, balloons, aircraft, and commercial launch programs launched from the ER by NASA's GSFC or the 45 SW, or by NASA's GSFC from Wallops Island, Virginia, or at other locations to be determined.

2. AUTHORITY

Section 203(c) of the *National Aeronautics and Space Act of 1958*, as amended (42 U.S.C. 2473(c))

3. REFERENCES AND APPLICABLE DOCUMENTS

- a. *Memorandum of Agreement Between the National Aeronautics and Space Administration (NASA)/Office of Space Communications (OSQ) and the Department of Defense (DoD) United States Air Force (USAF) 45th Space Wing (45 SW) for Titan IV/Centaur Program Support from NASA's Space Network (SN) Resources*
- b. *NASA Financial Management Manual (FMM) 9090*
- c. Title 49 United States Code, Section 70101-70119, *Commercial Space Launch Activities*
- d. DoD Directive 3200.11, *Major Range and Test Facility Base (MRTFB)*
- e. DoD 7000.14-R, *DoD Financial Management Regulation*
- f. Eastern and Western Range (EWR) 127-1, *Range Safety Requirements*
- g. 45 SW Instruction 99-102, *Test, Evaluation, Documentation, and Operational Acceptance of Eastern Range Systems*
- h. 45 SW Instruction 25-203, *45th Space Wing Agreements Program*
- i. *Range Commanders Council (RCQ) Universal Documentation System (ODS) Document 501-97*

4. BACKGROUND

NASA's GSFC and the 45 SW have a history of mutual cooperation in the business of space flight. The intent of this MOA is to encompass the areas of space system and ground system support of mission operations.

5. SCOPE

This MOA encompasses pre-launch testing, range safety, command or flight termination, voice/data communications, data acquisition and display, and tracking systems for flight mission support. These systems will provide range safety, flight termination, internal and external communications, data acquisition, and radar support for launch vehicles, payloads, sounding rockets, balloons, aircraft, and commercial launch programs. These services will be provided, upon request, on a scheduled basis after receipt and acceptance of the appropriate requirements documentation and up-front cost reimbursement.

6. MANAGEMENT INTERFACES

Each party will identify an Office of Primary Responsibility (OPR) that will manage and implement this MOA.

a. NASA's GSFC OPR for 45 SW lead range missions is the Network and Mission Services Project (Code 450); the OPR for Wallops Flight Facility (WFF) lead range missions is the Mission Management Office (Code 840).

b. The 45 SW OPR for the administration of this MOA is the Plans and Programs Office (45 SW/XPR); the OPR for range instrumentation matters is the Performance Management Division (45 LG/LGP); the OPR for safety issues is the Safety Office (45 SW/SE); and the OPR for funding/user requirements is the Range Squadron (45 RANS).

7. RESPONSIBILITIES

a. The lead range will be responsible for mission operations including range safety and mitigation of public risk, and for performing all safety analyses including the definition of the range safety system. The 45 SW shall review and approve flight hardware, flight termination systems, hazard analysis, testing procedures, and hazardous operations procedures per EWR 127-1 for all vehicles launched by NASA's GSFC on the ER.

b. Each organization will operate and maintain its respective instrumentation in accordance with established operations and maintenance procedures. During launch countdown, changes in status of supporting instrumentation will be reported to the user agency system controllers. This information will include the time and reason of the status change, and the estimated duration if repairs or reconfiguration are necessary.

c. When mutually agreed to, NASA's GSFC or the 45 SW may modify or replace the other organization's equipment when agreement and funding is supplied to do so. Each organization will coordinate the modification of its own equipment with the other organization, if the modification could affect the interoperability between the organizations.

d. Each organization will provide engineering support, training, manuals, and drawings to facilitate the operation and maintenance of its new equipment/systems as required. Configuration management and sustaining engineering of dedicated equipment will be the responsibility of the organization that provided the system. Configuration management of non-dedicated systems will be the responsibility of the custodian organization, with appropriate consideration given to the requirements of all other user organizations. Equipment interface requirements and installation details will be mutually agreed to.

e. The requesting organization will submit to the custodian organization for review and approval, all proposed facility modifications necessary to support the requesting organization's equipment or operational requirements.

f. The custodian organization will normally provide facilities support for on-site systems. All necessary physical security, heating, ventilation, air conditioning, power, and ducting will be provided under the terms of a reimbursement arrangement document.

g. The custodian organization will provide, on a reimbursable basis, requested repair services for dedicated components that have been provided to it by the requesting organization. Spare equipment, when available, may be loaned between the organizations to ensure system operability and reliability.

h. Test equipment that is normally used at or available to the system site will be made available for system support. Calibration and certification of the test equipment will be provided by the custodian organization.

i. Support requests and/or the submittal of requirements by the MOA parties shall be handled as follows:

(1) 45 SW requests for NASA systems and/or resources shall be submitted via the LIDS. Additionally, the 45 SW's requests must strictly adhere to policy and procedural documents that govern the use of NASA systems and/or resources.

(a) 45 SW high-level requirements for NASA systems and/or resources will normally be provided to the NASA in the form of a Program Introduction Document (PID), which shall be submitted 36 months prior to the first use by each class of vehicle for which the service is requested. (Refer to Section 8 for funding requirements.)

(b) Specific support requirements shall be provided in Program Requirements Document (PRD) format 18 months prior to the date of the requested use of NASA services. NASA's GSFC shall subsequently specify the detailed project support requirements documents and support planning documents, to be prepared by the 45 SW's project and support organizations, respectively.

(2) Support requirements for 45 SWER systems normally will be provided 18 months prior to the date of the requested use of the systems or as soon as the requirements are known for WFF launch operations support. These requirements shall be submitted via the UDS to 45 RANS.

j. Each March, both NASA's GSFC and the 45 SW will provide a five-year projected schedule of support requirements to each other, and will update and resubmit the schedule throughout the year as changes occur.

8. FUNDING

a. The 45 SW shall price services provided in support of NASA's GSFC launch activities and flight operations on a direct cost basis, consistent with Chapter 12 of DoD) 7000.14-11 and/or the Commercial Space Launch Act, as applicable. Costs associated with development, maintenance, and operation of 45 SW infrastructure services and facilities will be funded by the 45 SW. NASA's GSFC shall submit a NASA Defense Purchase Request (NDPR) with the requirements submission, which is due 18 months prior to the date of the requested use of the system or as soon as the requirements are known for WFF launch operations support. The 45 SW shall not provide reimbursable support prior to receipt of an NDPR with sufficient funding to cover the estimated cost of the support.

b. Each July, the 45 SW will provide a cost estimate for the next 5 years' operations in support of NASA's GSFC activities, based on the projected operations schedule provided by NASA's GSFC. This estimate will be updated during the operating year to reflect changes to the projected operating schedule.

c. NASA's GSFC shall price services provided in support of 45 SW launch activities and flight operations on a direct-cost basis, consistent with the documents referenced in Section 3, as appropriate. Costs associated with development, maintenance, and operation of NASA's GSFC infrastructure services and facilities will be funded by NASA's GSFC. The 45 SW shall submit the high-level requirements 36 months prior to the date of the requested use of the system. The 45 SW shall submit a Project Order for each program to NASA upon receipt of the letter of commitment to the high-level requirement submission.

d. Each July, NASA's GSFC will provide a cost estimate for the next 5 years' operations in support of 45 SW activities, based on the projected operations schedule provided by the 45 SW. This estimate will be updated during the operating year to reflect changes to the projected operating schedule. NASA shall not provide reimbursable support prior to receipt of a Project Order with sufficient funding to cover the estimated cost of support in accordance with the cost payment schedule.

9. ADMINISTRATION

a. This MOA shall become effective on the date of the last signature affixed hereto. This MOA may be modified at any time upon written approval of both the NASA's GSFC and 45 SW signatories.

b. This MOA supersedes the *Memorandum of Agreement Between the National Aeronautics and Space Administration (NASA)/Goddard Space Flight Center (GSFC) and the Department of the Air Force/45th Space Wing (45 SW) for Mutual Support*, dated March 16, 1996.

c. This MOA shall be reviewed at least triennially by both NASA's GSFC and the 45 SW to determine the need for its continuation, modification, or termination.

d. The termination of this MOA shall be six years from the date of the last signature affixed hereto, unless the MOA is extended in writing by mutual consent. This MOA may be terminated at any time by mutual consent, or by either party by providing the other party written notification at least 180 days prior to the desired termination date.

e. Upon declaration of a national emergency or general mobilization, this MOA shall remain in effect but may be subject to immediate renegotiation.